

What is claimed is:

1. A sheet supply apparatus for supplying a sheet, comprising:

a sheet supply tray for stacking the sheet;

an auxiliary tray movably attached to the sheet supply tray
5 to move between a support position where the auxiliary tray
supports a portion of the sheet stacked on the sheet supply tray
and a storage position where the auxiliary tray overlaps the
sheet supply tray;

sheet supply means situated adjacent to the sheet supply
10 tray for supplying the sheet stacked on the sheet supply tray;

sheet detection means mounted on the auxiliary tray for
detecting the sheet stacked on the sheet supply tray;

tray position detection means for detecting a position of
the auxiliary tray between the support position and the storage
15 position; and

identifying means electrically connected to the sheet
detection means and the tray position detection means for
identifying a length of the sheet in a sheet supply direction
based on detection results of the sheet detection means and the
20 tray position detection means.

2. A sheet supply apparatus according to claim 1, further
comprising sheet width detection means for detecting a width of
the sheet in a direction perpendicular to the sheet supply
25 direction; and determining means electrically connected to the
identifying means and the sheet width detection means for
determining a size of the sheet based on the length of the sheet
in the sheet supply direction determined by the identifying means
and the width of the sheet detected by the sheet width detection
30 means.

3. A sheet supply apparatus according to claim 2, wherein said sheet width detection means is disposed on the sheet supply tray for detecting the width of the sheet stacked on the sheet supply tray.

4. A sheet supply apparatus according to claim 1, wherein said tray position detection means includes a first tray position sensor for detecting the auxiliary tray at the support position, and a second tray position sensor for detecting the auxiliary tray at the storage position.

5. A sheet supply apparatus according to claim 1, wherein said sheet detection means is arranged at a position where the sheet detection means detects the sheet having a length longer than a first length when the auxiliary tray is positioned at the support position, and where the sheet detection means detects the sheet having a length longer than a second length and shorter than the first length when the auxiliary tray is positioned at the storage position.

6. A sheet supply apparatus according to claim 5, wherein said identifying means determines that the sheet has a length longer than the first length when the tray position detection means detects the auxiliary tray at the support position and the sheet detection means detects the sheet, and determines that the sheet has a length longer than the second length and shorter than the first length when the tray position detection means detects the auxiliary tray at the storage position and the sheet detection means detects the sheet.

7. A sheet supply apparatus according to claim 1, further comprising signal generation means for generating an error signal when the tray position detection means detects the auxiliary tray at a position different from the support position and the storage position.

8. A sheet supply apparatus according to claim 1, wherein said sheet detection means includes first sheet detection means mounted on the auxiliary tray for detecting the sheet stacked on the sheet supply tray, and second sheet detection means mounted on the auxiliary tray at a downstream side relative to the first sheet detection means in the sheet supply direction for detecting the sheet stacked on the sheet supply tray; and said identifying means determines the length of the sheet stacked on the sheet supply tray in the sheet supply direction by detection results of the first sheet detection means and the second detection means when the tray position detection means detects the auxiliary tray at the support position, and by detection result of the first sheet detection means when the tray position detection means detects the auxiliary tray at the storage position.

9. A sheet supply apparatus according to claim 8, wherein said identifying means invalidates the detection result of the second sheet detection means when the tray position detection means detects the auxiliary tray at the storage means.

10. A sheet supply apparatus according to claim 9, further comprising signal generation means for generating an error signal when the tray position detection means detects the auxiliary tray

at a position different from the support position and the storage position.

11. A sheet supply apparatus according to claim 8, further
5 comprising sheet width detection means for detecting a width of
the sheet in a direction perpendicular to the sheet supply
direction; and determining means electrically connected to the
identifying means and the sheet width detection means for
10 determining a size of the sheet based on the length of the sheet
in the sheet supply direction determined by the identifying means
and the width of the sheet detected by the sheet width detection
means.

12. A size detection method for detecting a size of a sheet
15 stacked on a sheet supply tray and an auxiliary tray extendably
mounted to the sheet supply tray for supporting a portion of the
sheet, comprising the steps of:

detecting the sheet by sheet detection means mounted on the
auxiliary tray;

20 detecting the auxiliary tray by tray position detection
means for determining a position of the auxiliary tray;

determining a length of the sheet stacked on the sheet
supply tray in a supply direction by detection results of the
sheet detection means and the tray position detection means;

25 detecting a width of the sheet by width detection means in a
direction perpendicular to the sheet supply direction; and

identifying a size of the sheet by the length of the sheet
in the sheet supply direction and a detection result of the width
detection means.

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13. An image reading apparatus for reading the sheet with an image formed thereupon, comprising: the sheet supply apparatus according to claim 1; reading means for reading the image on the sheet fed to a reading position by the sheet supply means;
5 discharge means for discharging the sheet read at the reading position; a discharge tray for storing the sheet discharged by the discharge means; sheet width detection means for detecting a width of the sheet in a direction perpendicular to the sheet supply direction; and determining means for determining a size of
10 the sheet based on the length of the sheet in the sheet supply direction identified by the identifying means and the width of the sheet detected by the sheet width detection means.

14. An image reading apparatus according to claim 13, wherein
15 said sheet width detection means is disposed on the sheet supply tray for detecting the width of the sheet stacked on the sheet supply tray.

15. An image reading apparatus according to claim 14, further
20 comprising transmission means for transmitting information regarding the size of the sheet determined by the determining means to an external device before at least the reading means reads the image on the sheet.